

AU/ACSC/03-1413E/2003-04

AIR COMMAND AND STAFF COLLEGE

AIR UNIVERSITY

THE ROLE OF NON-LETHAL AIRPOWER IN FUTURE PEACE
OPERATIONS

“BEYOND BOMBS ON TARGET”

by

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A Research Report Submitted to the Faculty

In Partial Fulfillment of the Graduation Requirements

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Maxwell Air Force Base, Alabama

April 2003

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Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE APR 2003		2. REPORT TYPE N/A		3. DATES COVERED -	
4. TITLE AND SUBTITLE The Role of Non-Lethal Airpower In Future Peace Operations: "Beyond Bombs On Target"				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Air University Press Maxwell AFB, AL 36112-6615				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release, distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT UU	18. NUMBER OF PAGES 31	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

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Acknowledgements

I would like to thank my wife Maggie for her endless patience this entire year. Additionally, I would like to thank Lt. Col. Michael Fiedler, whose guidance and endless questions were essential to this endeavor. Finally, I would like to thank the ACSC librarian, Stephanie Havron, for her help in efficiently acquiring research material that saved countless hours of wasted effort.

Abstract

Due to a variety of forces, the interest in supplying U.S. ground forces in support of U.N. peacekeeping operations is at its lowest point since the end of the Cold War. The ignominious withdrawal of U.S. ground forces from Somalia in 1994 coupled with the relative success of U.S. airpower in recent conflicts such as ALLIED FORCE leaves a situation whereby the U.S. public views airpower as an “acceptable” panacea for solving these situations. Despite the limited validity of this belief, airpower might realistically be the only contribution that Congress is willing to authorize in a time when the military is stretched fighting terrorism and possibly sustaining a long-term commitment in Afghanistan and Iraq.

Despite the fact that U.S. airpower will be involved in peace operations, the nature of intrastate conflict in the Post-Cold War era where peace operations are likely to occur is vastly different than the symmetrical threats the U.S. Air Force is most suited to fight. Based on this, several authors have questioned whether airpower is still relevant in these situations where it is difficult to distinguish combatants from non-combatants. More important for airpower strategists is how to effectively use airpower when political restraints limit the application of lethal force.

Given that airpower is the only contribution the U.S. might be willing to make, how can airpower be used effectively in peace operations? What are its strengths and limitations? Is there anything the U.S. Air Force can do to prepare for these types of operations? To answer these questions, this essay examines the non-lethal use of airpower in peace operations. In addition to

the traditional roles of airpower in peace operations such as reconnaissance and airlift, this essay examines airpower's role in operations such as psychological operations, air superiority and airborne communication. Finally, the essay considers the urbanization of the world population and the advances in non-lethal technologies, and how these trends will affect airpower's role in future peace operations.

Chapter 1

Introduction

A recent article written by noted historian Martin Van Creveld argues that airpower has lost its usefulness based on the nature of future conflicts. Other authors contend that airpower and high technology have little utility for dealing with peace operations because the problems are rooted in ethnicity, philosophy, and politics.¹ Due to the proliferation of intrastate wars over interstate wars, Mr. Van Creveld argues that most of airpower has become “useless and obsolete”.² Using this train of thought, the nature of peace operations for the remainder of the twenty-first century would negate the advantages of airpower leaving most Air Forces relegated to auxiliary roles of transportation and limited airborne surveillance.

These authors are wrong in their contention that airpower has a limited role in future peace operations.³ These dismissive assertions come from a myopic view of airpower that fails to understand the scope of modern airpower, the versatility of air and space systems and platforms, or the synergistic effects of airpower when properly combined with effective ground forces. Modern airpower in peace operations is not solely limited to dropping bombs, reconnaissance, and air mobility functions. As Carsten Ronnfeldt described in his study of airpower in United Nations (U.N.) peace operations: “Reducing air power to an instrument of force application and destruction...eliminates a whole range of potential functions of this medium.”⁴ This essay examines the future of non-lethal airpower in peace operations,

concentrating on those roles and functions that will have the most impact in the future based on current trends in peace operations.

In order to provide the framework for this essay, it is important to highlight certain issues. First, this essay excludes a discussion of the application of lethal force by either fixed or rotary wing air assets except a short discussion on its use in the section on urban combat. While destructive force *can* be airpower's greatest asset,⁵ this essay focuses on the wide variety of capabilities that airpower can provide *in addition to* the application of lethal force. The challenge for future commanders will be on how to effectively use airpower when political restraints, ROEs, or other constraints prevent or limit the lethal use of airpower.

Second, and perhaps most importantly, airpower is clearly *not a stand-alone panacea* for solving peace operations as some overly optimistic air proponents argued after Kosovo.⁶ It is simply a tool to assist leaders with the extremely difficult task of finding an acceptable political solution to the conflict. Airpower must be part of a coherent political strategy if it is to be effective. Military force alone can, at best, only enforce peace for short amounts of time. At worst, military force can ruin any gains in the peace process when it is used *independently* of the peace process. Airpower is no different in its need to be part of a coherent strategy. It must be integrated with land forces and diplomatic efforts to be successful. In other words, "air power comprises a number of assets that can make a valuable contribution to international conflict-management efforts."⁷ If force is not used with the ultimate goal of conflict resolution in mind, its benefits will be short-lived. Essentially, "the military can stop the fighting and enforce or enable a cease fire, but it cannot resolve underlying problems."⁸ Any use of airpower, not just in peace operations, must be undertaken with this in mind.

Finally, airpower's limitations in the roles of peace operations are numerous and significant, but outside the scope of this essay. The focus of this essay is on describing the roles, situations, and environments where airpower can contribute to conflict resolution – not on airpower's failings. The important issue for commanders is to understand the strengths and versatility that airpower can bring to peace operations. As Colonel Robert Owens noted, the important part of discussing airpower's contribution to peace operations is not which service is best suited for operations, but how to use airpower “in conjunction with other forms of military power.”⁹

This essay is broken into three main sections evaluating the use of airpower in peace operations. The first section demonstrates that U.S. airpower will play a widespread, continuing, and vital role in future peace operations. The second section evaluates five “traditional” uses of airpower in peace operations and suggests further improvements for these functional uses of airpower in future situations. Although air superiority is included in this section and will usually require some application of force, it is included solely for its enabling capacity rather than its coercive aspect. Finally, the third section analyzes some future issues concerning armed conflict that affect air power as it relates to peace operations.

Notes

¹ Lt. Col. Brooks L. Bash, “Airpower and Peacekeeping,” *Airpower Journal* 9, Issue 1 (Spring 1995): 67.

² Martin Van Creveld, “The Rise and Fall of Air Power,” *MHQ: The Quarterly Journal of Military History* 8, No. 3 (Spring 1996): 81.

³ This essay uses definitions in Joint Pub 3-07.3 *Joint Tactics, Techniques, and Procedures for Peace Operations*. The term ‘peace operation’ is an umbrella term covering operations throughout the entire spectrum. ‘Peace keeping’ is defined as “operations undertaken with the consent of all major parties to a dispute” and ‘peace enforcement’ refers to operations that “are coercive in nature and are conducted when the full consent of all parties...has not been achieved or might be uncertain.”

Notes

⁴ Carsten F. Ronnfeldt and Per Erik Solli, eds., *Use of Air Power in Peace Operations, Peacekeeping and Multinational Operations*, No.7, Norwegian Institute of International Affairs, 1997, 14.

⁵ This is especially true as operations move towards peace enforcement.

⁶ After ALLIED FORCE, several air power enthusiasts even proposed that ground forces would only be required to 'clean up' in future operations.

⁷ Ronnfeldt, 10.

⁸ Major William C. Thomas and Lt Jeremy D. Cukierman. *The Next Peace Operation: U.S. Air Force Issues and Perspectives*, INSS Occasional Paper 25, USAF Planning Series, USAF Institute for National Security Studies, USAF Academy, Colorado. May 1999, 17.

⁹ Col. Robert C. Owen, "Aerospace Power and Land Power in Peace Operations: Toward a New Basis for Synergy," *Airpower Journal* (Fall, 1999): 5.

Chapter 2

U.S. Airpower Involvement in Peace Operations

When considering the use of airpower in peace operations, the question for commanders is how exactly can the U.S. apply airpower to bring about the complex political solution desired?

—Dr. John Hillen

Introduction

Current developments indicate that U.S. involvement in U.N. sanctioned, U.N. contracted, coalition, or unilateral peace operations are likely to continue unabated for the foreseeable future. Furthermore, due to a combination of domestic factors, there is an excellent chance that airpower will be the first or only type of military force that the United States is willing to commit to a majority of peace operations.

Peace Operations Will Continue for the Foreseeable Future

The effects of the break up of the Cold War are still being felt throughout the globe. Arbitrary lines drawn on maps by the great powers left a vast amount of the world's populations living within nation-states with multiple religious, cultural, and ethnic groups. As the structure and restraints placed on these countries ended with the conclusion of the Cold War, many of the factions resorted to violence in an effort to form independent identities or respond to perceived atrocities. There is no evidence that this trend is likely to end soon. With current demographic

projections, resource scarcity, economic stagnation, and small arms proliferation combined with rising nationalism, violence will likely be the result. When this violence affects other countries in the region, or a great power's national interests are threatened, some sort of military action or peace operation will likely be initiated by the affected countries or by a regional organization. The U.N. alone is currently involved in fourteen different peace operations according to its website.¹

U.S. Involvement is Extremely Likely

The number of events that could lead to U.S. involvement in these situations is unlimited. Perhaps even more important to realize is that the U.S. could easily become involved in peace operations with or without a U.N. Security Council mandate. Due to the Security Council's recent retrenchment, there is a growing tendency to "outsource" operations to regional organizations.² The U.S. could become involved in peace operations via a regional organization just as easily as through a Security Council mandate. Even without tacit U.N. approval, the U.S. might become involved through regional organizations similar to the situation in Kosovo, where the U.N. did not attempt to authorize action due to a known veto by Russia if the mandate were introduced to the Security Council.³ Similarly, the U.S. could engage in operations through a "coalition of the willing" as in Iraq.

The catalyst for U.S. involvement is not limited to multilateral organizations. Events in our own 'backyard' could easily prompt unilateral operations. Massive civil unrest or intrastate conflict in Mexico as a result of economic deterioration would almost certainly trigger U.S. involvement for reasons of national security and to calm domestic fears. A return of Haitian refugees could prompt U.S. involvement, as could a similar situation anywhere in the Americas. Any of these possible scenarios could prompt some sort of U.S. peace operation. Coupled with

the current state of affairs in Afghanistan and Iraq, the chances for long-term peacekeeping operations involving the United States are a near certainty.

Airpower is Likely to be the First and Possibly Only U.S. Military Contribution to Peace Operations

Due to a variety of forces, domestic support for supplying U.S. ground forces in support of U.N. peacekeeping operations is near its lowest point since the end of the Cold War. Incidents such as the ignominious withdrawal of U.S. peacekeeping ground forces from Beirut and Somalia have sullied the impression in the American public mind concerning the effectiveness of these troops in support of U.N. peace operations. Recent events with the United Nations and Security Council over Iraq have further decreased the likelihood of U.S. ground involvement via the United Nations. Conversely, the relative success of U.S. airpower in contributing to the victories in DESERT STORM, DELIBERATE FORCE, and ALLIED FORCE leaves a situation whereby the U.S. public views airpower as an alternative and “acceptable” cure-all for solving nearly any situation. In essence, “airpower seems to offer easy answers to hard questions of how to project U.S. power without risking U.S. lives or involvement in protracted ground wars.”⁴ Despite the limited validity of this belief, airpower might realistically be the only contribution that Congress is willing to authorize. The U.S. military’s ground forces are already stretched thin fighting in Iraq and Afghanistan and pursuing terrorist organizations and drug cartels in the Philippines, Indonesia, and in South America. Coupled with already heavy Reserve and National Guard use and probable long-term commitments in Afghanistan and Iraq, it is unlikely that Congress will authorize any additional taskings involving U.S. ground forces.

If the U.S. chooses to become involved in a peace operation, airpower is likely to be the type of involvement *actually* provided by the U.S. When other avenues of conflict resolution fail

for the United States, “airpower is the inevitable inheritor of the problem...Elected officials continually call on airpower.”⁵ The main cause of this reliance on airpower is the combination of hyper-aversion to U.S. casualties for less-than-vital national interests (the Mogadishu syndrome), coupled with the American faith in the success of technology and airpower after DESERT STORM and ALLIED FORCE. For many U.S. officials, “airpower assets may help alleviate the growing domestic demand to reduce risk to U.S. military personnel”⁶ and airpower “seems to offer the potential of force projection without politically unacceptable risks.”⁷

History clearly supports these assertions concerning U.S. air power use in peace operations. Between 1956 and 1996, the USAF supported 47 different peace operations. Between 1991 and 1997 alone, the Air Force flew over 130,000 hours in support of peace operations.⁸ Since the end of the Cold War when peace operations required less than 1 percent of flight hours, RAND estimated in 1997 that “peace operations consumed 10 percent of Air Force flight hours.”⁹ Given the historical precedent and the current political climate, it appears certain that the U.S. Air Force will be involved in peace operations for the foreseeable future. Put more bluntly, “such taskings are going to come to the USAF whether or not the institution finds [peace operations] an attractive mission.”¹⁰

Notes

¹ “Current U.N. Peace Operations”, 14 February 2003, n.p., on-line, Internet, available from <http://www.un.org/peace/bnote010101.pdf>.

² Such as NATO, OSCE, or ECOWAS. See *Blue Helmet Blues: Assessing the Trend Towards ‘Subcontracting’ UN Peace Operations* by Michele Griffin for more information on this subject.

³ Due to historical ties with Serbia, Russia made it clear that it would veto any Security Council resolution involving action against Serbia.

⁴ Chris Morris and Janet Morris, “Weapons of Mass Protection: Nonlethality, Information Warfare, and Airpower in the Age of Chaos,” *Airpower Journal* (Spring, 1995): 23.

⁵ Morris, 18.

⁶ Lt. Col. Brooks L. Bash, “Airpower and Peacekeeping,” *Airpower Journal* 9, Issue 1 (Spring 1995): 76.

Notes

⁷ Morris, 15.

⁸ Alan Vick, David T. Orletsky, Abram N. Shulsky and John Stillion. *Preparing the U.S. Air Force for Military Operations Other Than War*. RAND Report MR-842-AF (Santa Monica, Calif.: RAND, 1997): 15.

⁹ Vick, 17.

¹⁰ Vick, 77.

Chapter 3

Traditional Roles of Airpower in Peace Operation

We can't be in there slinging 2,000 lb. bombs around at 450 knots. You do not win people's hearts and minds by throwing that kind of stuff around.

—U.N. Commander in Bosnia

Introduction

Given that airpower is the only contribution the U.S. might be willing to make, the question becomes how can airpower be used effectively in peace operations? This section analyzes the non-lethal roles of airpower in peace operations with emphasis on benefits to a Joint Force Commander (JFC) and suggestions for improvements in future operations. The table to the right lists the capabilities provided by air assets according to joint doctrine. Rather than examine each one individually, this essay examines five general roles of airpower that will have the greatest impact in the future. For example, the section on airlift will cover

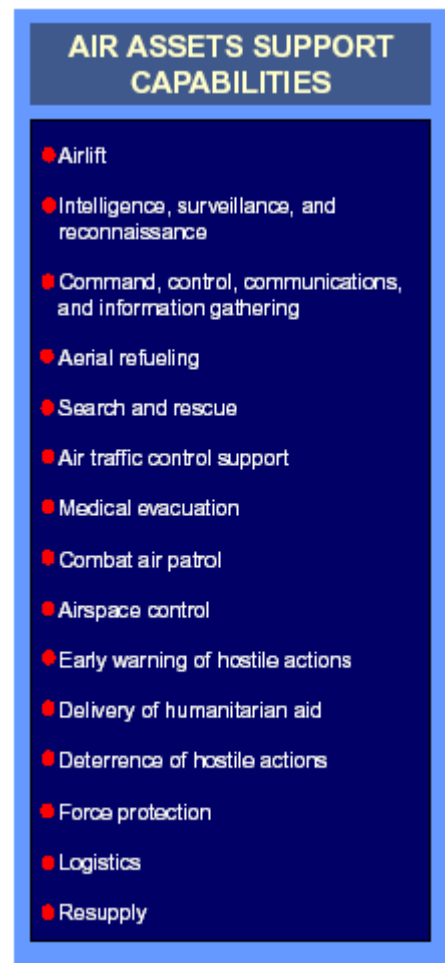


Figure II-3. Air Assets Support Capabilities

Joint Pub 3-07.3 Joint Tactics, Techniques, and Procedures for Peace Operations.

delivery of humanitarian aid, logistics, resupply, medical evacuation, and airlift from the table since all of these capabilities are variations of missions resulting from air transport.

Air Superiority

While air superiority is a persistent item in discussion of air combat because of its enabling function, it rarely is mentioned in discussions about peace operations. However, without air superiority, it is difficult if not impossible to accomplish any military *or civil* objectives of peace operations – in the air or on the ground. Air superiority grants freedom of movement to the peace operation. Without it, basic mission requirements can be hindered. This was abundantly clear in the Democratic Republic of the Congo in the early 1960s when a single converted training jet nearly brought the entire U.N. mission to a halt because of fears that a civilian passenger jet would be shot down. Not until air combat forces were brought in to achieve air superiority was the mission able to continue.¹

With few exceptions, most traditional peace keeping operations have taken place in areas where freedom of movement of U.N. air forces was taken for granted. However, the trend towards peace enforcement operations coupled with the proliferation of advanced ground-to-air threats creates a situation where air superiority must be achieved and enforced – not taken for granted.² The ability to achieve air superiority not only guarantees freedom of movement for air and ground forces, it provides ground forces with protection from air attack. Essentially, “by controlling the airspace, the UN enables its own activities. Establishing air supremacy reduces UN personnel’s vulnerability to sieges or attacks from belligerents.”³ Without question, achieving air superiority will be a necessity in future peace operations regardless of whether airpower will be the focus of the operation. Commanders would be well advised to establish air superiority as their first priority as a precursor to commencing operations on the ground.⁴

Airlift

Perhaps the most basic form of airpower in peace operations past and future will be airlift. While typically described as an auxiliary function of airpower, history clearly shows that air transport is vital to certain peace operations – not a “nice to have” benefit. In several U.N. missions, air transport was the *only* way to deliver certain supplies, personnel, and equipment to isolated regions of these countries. In many countries, the poor or complete lack of infrastructure prohibits rapid delivery of troops and equipment via roadways. For example, in the Democratic Republic of the Congo, the “use of airpower for transportation of personnel and supplies was indispensable, constituting no less than the backbone of ONUC.”⁵ The same situation existed in Somalia, where airlift provided the fastest and sometimes only means to deliver humanitarian relief supplies.

More importantly, air transport allows commanders to bypass the time consuming and difficult task of securing Lines of Communications (LOC) on the ground. For example, in Somalia, due to the dangerous security situation present as a result of the warlords, it is unlikely the U.N. mission could have secured all of the necessary ground routes the relief convoys would need to transverse to deliver food to all the affected regions of the country.

Even in areas where adequate ground infrastructure exists, air mobility can provide a solution to a number of problems with ground transport. Many times, disputing parties challenge freedom of movement to gain an advantage. In Bosnia, “closed roads, vehicle checks, and harassing fire serve to manipulate peacekeepers and degrade their effectiveness.”⁶ In today’s terminology, belligerents try to create ‘anti-access situations’ for ground personnel. For example, a “relief convoy in the former Yugoslavia passed 90 roadblocks over a distance of only 250 miles.”⁷

The ubiquitous use of mines in modern combat zones makes air mobility even more important to peace operations. Mines are extensively used and difficult to detect and remove. In areas like Cambodia, heavy rains and flooding wash mines back into previously cleared areas creating havoc for the ground forces. The UNPROFOR mission in Bosnia contended “with the nightly mining of essential roads”⁸ which slowed progress. Clearly, in some cases airpower - via air mobility - provides the *only* means to accomplish the mission, not just provide a supplementary role.

Some emphasize airlift even further, suggesting that for peacekeepers, “efficient mobility is critical to the effective deterrence of hostilities.”⁹ Airlift provides ground forces with the ability to rapidly respond and reposition forces as necessary against threats. This ‘rapid reaction’ concept is a force multiplier for the usually small initial contingency of ground personnel, and can help prevent the development of hostilities.

Since air mobility will continue to be an essential part of peace operations for the foreseeable future, it is important to consider what the U.S. can do to further improve this capability. The two biggest problems for airlift early in peace operations are a lack of security and poor infrastructure. Security involves eliminating both air and surface threats to airlift assets. Air threats can be eliminated by achieving air superiority as discussed above, while countering ground threats will involve placing security forces on and near airports used in the operation.

Poor infrastructure constitutes anything that prohibits, slows, or impedes the rapid delivery of personnel, equipment, and supplies to a particular airfield. This could include a lack of adequate runways, navigational equipment, or the absence of air traffic control. These conditions are widespread in the regions of the world where peace operations are likely to take

place. JFCs must establish early coordination with combat controllers, Tanker Air Lift Control Element (TALCE) teams, and NGOs in order to increase the effectiveness of airlift in future operations. This can be as simple as ensuring portable airfield lighting and Microwave Landing Systems at the major airports to allow 24 hour, all-weather operations. In most cases, the limitation is not the number of aircraft or helicopters, it is “throughput” of the airlift assets through the few airfields capable of supporting large aircraft.

One final substantial way to improve our capability in these environments is by acquiring an aircraft more designed for the purpose. Dr. James S. Corum noted that “since humanitarian operations will probably entail flying people and supplies to small outposts scattered over a broad area, the USAF ought to consider maintaining a squadron of twin-engined light transports.”¹⁰

Reconnaissance

The third traditional role of airpower that shows ever-greater promise in peace operations is reconnaissance. What will make this function of airpower even more useful are recent advances in UAV technology, the quality of photo resolution, and the ever-increasing satellite coverage and quality available from both governmental and commercial sources. More importantly, “in current peace operations, the increased quality and duration of aerospace observation comes at greatly reduced exposure and costs for peacekeeping forces.”¹¹ They can be used for a variety of traditional missions in almost any environment including mountainous terrain and high-threat urban areas. These UAVs can also provide much better bomb damage assessment (BDA) and other forms of post- and pre-hostility information than previous forms of reconnaissance available in peace operations.

Recent advances in UAV technology are improving their performance (loiter time, range, types of imaging, etc.), decreasing their size, and lowering their operational costs. For example, a high altitude UAV can now “monitor cantonment areas, highways, and open areas using a radar with an SAR¹² mode and a moving-target indicator (MTI) mode.”¹³ If a change is detected, “on-board computer processing of SAR images can compare images from the last mission with the current images to identify changes. If a change is detected, the radar’s MTI mode can be used to search the area around the cantonment area for moving vehicles.”¹⁴ This reduces both expensive manned flights of high demand/low-density assets and the total ground force required to support the mission or respond to the information. In effect, aerospace observation makes the “job of land-based observation much easier, certain, and productive.”¹⁵

The utility of new tactical UAVs for peace operations is nearly limitless based on their small size and low-cost. While the Predator and Global Hawk’s operational costs are skyrocketing as the DoD has added capabilities, there are a number of low-cost, extremely small tactical UAVs available on the open market. Insitu Group, a subsidiary of Boeing Aerospace, currently has a UAV called *ScanEagle* that flew 2700 kilometers on 1.5 gallons of gas, can fit in a briefcase, can land in less than 100 feet, and can be operated with no prior aviation background.¹⁶ The next modification of *ScanEagle*¹⁷ will have an “endurance of 60-plus hours, allowing for ‘air storing’ scenarios to support ground troops, provide a communication node, and provide an ISR platform. This new version will be completely autonomous or can be piloted via a control station the size of a Palm® pilot.”¹⁸

These new Remote Piloted Vehicles (RPVs) and UAVs are an order of magnitude less expensive than current military models. For example, Insitu Group estimates that *ScanEagle* can accomplish 80% of Predator’s missions at 5% of the costs. A recent Congressional study

reported that the DoD is developing small RPVs that “can be as inexpensive as the largest model airplane.”¹⁹ Because of the variety of benefits of UAVs and RPVs, they “are likely to become the primary means of reconnaissance and surveillance in future peace operations.”²⁰

An even better example of the power of reconnaissance for peace operations comes from the Dayton Peace Accords after the conflict in Bosnia. The Americans, using computer software, were able to couple imagery from satellites and aerial photographs into a three-dimensional, moving model of Bosnia’s terrain. After representatives from the three sides initialed the peace agreement, they “went on a simulated 650 mile long border to determine, in some cases, on which side of the road the boundary should run. The flight lasted nine hours. The imagery at Dayton helped eliminate mistrust and disinformation and served as a confidence building measure.”²¹

The benefits of accurate reconnaissance and surveillance for competing factions can be tremendous. In many instances, evidence provided by these assets can be the foundation of trust, verify agreements and violations, and provide early warning of impending conflict. In many ways, the accuracy and impartiality of this form of airpower provides an opportunity to help solve the problems born out of mutual skepticism based on cultural, religious, or ethnic beliefs.

As the technological performance of UAVs increase with a simultaneous decrease in the cost, the potential for peace operations is enormous. This form of airpower could be a low-cost, personnel-limited way for the United States to “participate” in future peace operations without dealing with the heavy political and diplomatic requirements of sending in ground personnel.

Psychological Operations (PSYOPS)

One of the most often overlooked forms of airpower is its use as part of a psychological operations campaign. In peace operations, PSYOPS support can be “one of the most important

services that an air force can provide.”²² The use of air assets for PSYOPS in peace operations has value as a public information resource by countering the effects of disinformation programs by factions of disputing parties. For example, “in mid-October 1997, SFOR used Commando Solo to transmit on a frequency normally used by Bosnian Serb TV, actively countering the adversary propaganda by explaining that the absence of normal programming was due to the actions of the Bosnian-Serb leadership”.²³

This type of airpower can also be used to drop leaflets over populated areas. These leaflets provide the ability to both inform the local civilians about operations and to shape the battlefield. For example, PSYOPS units in Somalia conducted over 7 million leaflet drops to explain both why the U.N. was in Somalia and the details of specific operations.²⁴ In many cases, these leaflets proved critical to operations conducted by U.N. military forces by encouraging Somalis to support the arrival of U.S. forces and convoy security missions, publicizing engineering operations, promoting minefield awareness, and announcing food and water distribution locations and procedures.

During the US invasion of Haiti, “the psyops message disseminated by radio and leaflet informed the populace of US intentions and played an important role in keeping people calm. Much of the credit for the lack of Haitian resistance can be attributed to an effective psyops campaign – particularly airborne psyops.”²⁵ Dr. John Hillen, Senior Fellow at the Center for Strategic and International Studies, goes one step further by claiming that in Haiti “the Air Force’s 193 Special Operations Wing...may have contributed more to the initial success of that operation than any other air asset.”²⁶

In many situations, this type of airborne radio transmission can be vital to the success of the peace operation. For example, during Operation Restore Hope, the Somalis possessed an

extremely low literacy rate and a culture that relied almost exclusively on radio broadcasts for news, information, and communication. However, the poor communications equipment coupled with “technical difficulties with the radio transmissions to interior regions”²⁷ created a situation where only airborne assets could successfully broadcast the message throughout the country. Situations with unusual cultural environments and limited infrastructures will be common in future peace operations, and future commanders will have to integrate this form of airpower into all phases of peace operations.

Communications

Effective and timely communication with personnel involved in a peace operation lies at the very core of success. Unfortunately, commanders can expect that they will be hampered in this regard. In past peace operations, communications were extremely difficult for three reasons. First, interoperability problems resulting from differences in equipment and procedures between different participating nations. Second, a lack of permanent communications facilities often forced peacekeepers to rely on temporary and ad hoc arrangements. Finally, communications were often hampered by intentional degradation of communications capabilities.²⁸

While the interoperability problems are not likely to improve in the short-term, U.S. airpower can provide a solution to the other two of these problems. Airborne communication suites can provide protection of assets and provide a sense of permanency that will not be revoked by the host nation. Furthermore, recent improvement in satellite communication allows greater range and independence for all organizations. Enhanced satellite capabilities can “provide the U.N. force commander with reliable and secure communications for impartial negotiations and efficient access to U.N. headquarters.”²⁹ In essence, “communications enhanced by airpower can provide benefits to peacekeeping at all levels of command. Both

satellite and airborne communications can enhance effectiveness through greater ground-unit connectivity and reliability.”³⁰

Notes

¹ Havard Klevberg, “Logistical and Combat Air Power in ONUC,” in *Peacekeeping and Multinational Operations*, ed. Carsten F. Ronnfeldt and Per Erik Solli, Norwegian Institute of International Affairs, 1997 Klevberg, p.46.

² Typical ground threats include Surface-to-Air missiles (SAM), Anti-Aircraft Artillery (AAA), and Man-Portable Air Defense Systems (MANPADS).

³ Carsten F. Ronnfeldt and Per Erik Solli, eds., *Use of Air Power in Peace Operations, Peacekeeping and Multinational Operations*, No.7, Norwegian Institute of International Affairs, 1997, 16.

⁴ The argument could be made that air superiority might be the last use of military forces in a peace operation as well. The six largest peace operations involving the U.S. military since 1991 (Deny Flight, Deliberate Force, Joint Endeavor, Provide Comfort, Southern Watch, and Allied Force) have all involved no-fly zones as part of the diplomatic settlement. The reality is that in future operations, “no-fly zones may also be imposed, whose policing can only be undertaken by combat aircraft” (Bowen, p.3).

⁵ Klevberg, 43.

⁶ Gustav Hagglund, “Peace-Keeping in a Modern War Zone,” *Survival* 32, no. 3 (May-June 1990): 234.

⁷ Lucia Mouat, “UN Struggles to Keep Politics Out of Relief,” *Christian Science Monitor*, 7 January 1993, 3.

⁸ Robert Marquand, “For UN Peacekeepers in Croatia, Isolation is Tough Challenge,” *Christian Science Monitor*, 14 December 1992, 6.

⁹ Lt. Col. Brooks L. Bash, “Airpower and Peacekeeping,” *Airpower Journal* 9, Issue 1 (Spring 1995): 75.

¹⁰ James S. Corum, “Airpower and Peace Enforcement,” *Airpower Journal* (Winter 1996): 14.

¹¹ Col. Robert C. Owen, “Aerospace Power and Land Power in Peace Operations: Toward a New Basis for Synergy,” *Airpower Journal* (Fall, 1999): 18.

¹² Synthetic Aperture Radar.

¹³ Alan Vick, David T. Orletsky, Abram N. Shulsky and John Stillion. *Preparing the U.S. Air Force for Military Operations Other Than War*. RAND Report MR-842-AF (Santa Monica, Calif.: RAND, 1997): 65.

¹⁴ Vick, 66.

¹⁵ Owen, 18.

¹⁶ Steven C. Nordlund, Vice President for Business Development, Insitu Group, interviewed by author, 12 March 2003.

¹⁷ Scheduled for delivery in 2004.

¹⁸ Nordlund, n.p.

¹⁹ U.S. Congress, Office of Technology Assessment, *Improving the Prospects for Future International Peace Operations-Workshop Proceedings*, OTA-BP-ISS-167 (Washington, DC: US Government Printing Office, September 1995): 108.

Notes

²⁰ Corum, 16.

²¹ Timothy L. Thomas, "Preventing Conflict Through Information Technology," *Military Review* (Dec 1998/Jan-Feb 1999): 46.

²² Corum, 16.

²³ "EC-130 Commando Solo". *Global Security.Org*. n.p. On-line. Internet, 03 April 2003. Available from <http://www.globalsecurity.org/military/systems/aircraft/ec-130e.htm>. This modified C-130E aircraft provides independent broadcast, transmission, reception and jamming capabilities on AM, FM, HF, TV, and military transmission channel. It flies at maximum altitudes to ensure widest propagation.

²⁴ The U.S. withdrew its PSYOPS units in March 1993. Several authors consider this a mistake since the U.S undertook a fundamental change in US policy (hunting down Gen Aideed) without explaining it to the populace.

²⁵ Corum, 16.

²⁶ Dr. John Hillen, "Peacekeeping at the Speed of Sound: The Relevancy of Airpower Doctrine in Operations Other Than War," *Airpower Journal* (Winter, 1998): 7.

²⁷ John L. Hirsch and Robert B. Oakley, *Somalia and Operation Restore Hope: Reflections on Peacemaking and Peacekeeping*. (U.S. Institute of Peace Press: Washington, D.C. 1995), 63.

²⁸ Bash, 70.

²⁹ Bash, 71.

³⁰ Bash, 71.

Chapter 4

Future Trends for Airpower in Peace Operations

While the historical and modern doctrinal guidance is to avoid urban warfare if possible, the challenges of contemporary peace operations suggest the opposite.

—Global Security

The ability to nonlethally overwhelm an enemy who is using lethal force has become a clear requirement for peacekeeping, peace enforcement [and] urban areas...where minimum destruction of life and property are prerequisites for action

—Chris Morris, Research Director, US Global Strategy

Introduction

As discussed earlier, there seems to be overwhelming indications that peace operations will continue to be a fact of life for the U.S. military. After evaluating the traditional roles that will be most useful and effective in future operations, it is now time to examine two specific issues that will confront commanders as they try to utilize airpower in peace operations. The first is the urbanization of the world's populations and its resulting effect on conflict and peace operations. The second issue is the continuing requirement to deal with armed populaces as opposed to uniformed armies. For airpower this will require an increasing willingness to explore nonlethal technologies (NLTs) in an effort to limit casualties and collateral damage. These two issues will increasingly be factors in future operations.

Airpower in Urban Environments

Although it appears that the *worst* fears of urban combat in Baghdad are not coming to fruition in Operation IRAQI FREEDOM, it is a near certainty that most forms of conflict in the future will involve combat in urban environments. Demographic trends indicate that over half of the world's population will live in urban areas within the next ten years.¹ This trend is most pronounced in areas of the globe most likely to involve peace operations: third world countries in Africa and the Asian subcontinent. The implications for peace operations are clear - "the effects of increased urbanization suggest that a higher proportion of conflicts will take place within urbanized areas."² While military operations in urban environments might seem to negate airpower's advantage, airpower can still significantly contribute in these situations. Unquestionably, all of the aerospace functions discussed in section two will still impact urban environments.³ However, aside from lethal firepower, advanced UAVs will be the most beneficial use of airpower in these environments.⁴

Many of the developments in UAVs and RPVs discussed earlier have applicability to urban environments. Certain models of UAVs can be modified for use specifically in these situations. For example, UAVs outfitted with "hyper spectral image processors, thermal imagers, long-range electro-optical devices, and air-implanted ground sensors can give airborne platforms an enduring, often high-resolution, portrait of activities in urban areas."⁵ When used properly, these UAVs and RPVs can provide peace operation forces with a capability unavailable to ground forces alone.

Other UAVs and RPVs are custom-designed for use in urban operations. Insitu Group recently patented a 'micro' RPV called *SkyHook* for urban or other closed-in terrain operation that allows for **vertical** recovery.⁶ Another development will "use a small battery powered UAV

equipped with an uncooled thermal imager and flown at building level or below to provide high-resolution, covert, night monitoring or activities during urban peace operations.”⁷

Although the application of force and its coercive presence is not the focus of this essay, it is worth mentioning some changes in its applicability to urban operations. Historically, the biggest impediments to using airpower’s lethality in urban environments are obscuration from weather and a lack of precision resulting in excessive collateral damage. The relevancy of these issues is rapidly declining with today’s multitude of GPS precision weapons.⁸ Weapon engineering has advanced to the point that it is possible to determine *which* walls of a building can be destroyed. The more precise the ability to deliver munitions from air assets, the more willing commanders are to use them in urban environments. As the Air Force continues to develop and procure smaller GPS munitions, this trend will only continue.⁹ Early indications from Baghdad are that precision weapons in urban environments are producing far less collateral damage than in past conflicts.

Additionally, the coercive nature of attack helicopters provides a powerful force multiplier for ground forces in urban environments. The use of these helicopters is “often enough to deter violence and control crowds even in difficult urban situations.”¹⁰ In Mogadishu, the 10th Mountain Division after action report stated that “on several occasions, the mere presence of the attack helicopter served as a deterrent and caused crowds and vehicles to disperse.”¹¹ Nonetheless, Mogadishu provides a vivid example of the limitations of using helicopters in urban environments. As noted earlier, due to proliferation of SAMs, “future battlefields will be significantly more dangerous for aircraft than Mogadishu was, requiring RPVs.”¹²

Finally, helicopter airlift in urban environments is essential. In addition to the benefits of airlift being able to circumvent the multitude of problems with ground convoys, this type of airlift provides a rapidity to combat operations in urban situations that is essential. The very nature of urban conflict drives the requirement for surprise and the rapid build up of combat power to seize objectives before the situation degrades to an assault against defended urban terrain. In these cases – when “urban operations require surprise and rapid power projection, airpower is essential.”¹³

Airpower and the Use of Nonlethal Technology

The other trend for U.S. airpower strategists to consider for future peace operations is the increasing lack of “uniformed” soldiers involved in conflict. Simple and traditional peace keeping operations such as UNEF I on the Sinai Peninsula where U.N. observers stood guard between two conventional armies in an open desert environment is increasingly rare. More likely are conflicts like those seen in Mogadishu, Grozny, and Basra. Combatants will increasingly be indistinguishable from noncombatants and women and children will likely be forced to act as human shields. Furthermore, in many of these situations, the civilian population is heavily armed.¹⁴ The overwhelming restraint and concern for civilian casualties demonstrated during the U.S.’s recent *combat* operations in Iraq demonstrate the enormous pressure on U.S. forces to avoid unnecessary loss of life. Coupled with the sensitivity about U.S. personnel dying in peace operations, there appears to be a seemingly untenable situation for U.S. forces.

However, recent advances in the quality of non-lethal technologies suggest a possible solution to this dilemma. Non-lethal technologies are defined as weapons that “are designed to disable personnel, weapons, supplies or equipment in such a way that death or severe permanent disability are unlikely.”¹⁵ Among NLTs are lasers, the use of acoustics, high power microwaves,

non-nuclear electron-magnetic pulses (EMP), jamming, obscurants, foams, glues, super caustics, information warfare, and low collateral damage kinetic munitions. Almost any action taken without the intent to kill or destroy could be included in this group of technologies.

Due to the ability of non-lethal technologies to limit bloodshed, casualties, and in some cases limit physical destruction, there is an increasing willingness to explore the use of these technologies. The pressure to use this technology is obvious – they “can more readily be used in situations where use of traditional force would be ill-tolerated by public opinion.”¹⁶ With “public tolerance of the costs of intervention at an all-time low, decision makers are hoping that nonlethal alternatives might ease the task of playing GloboCop. ‘It’s coming from the desire to have wars that are bloodless,’ says Harvey Sapolsky, who is a political scientist at MIT. ‘We don’t want Americans killed, we don’t want civilians killed, and we don’t even want some of the enemies killed. That’s a big constraint.’”¹⁷ NLTs could solve an incredible amount of the problems encountered on a regular basis by peacekeepers.¹⁸ In fact, non-lethal technologies “have the most potential in [situations] like those in Somalia and Haiti where it is difficult to tell enemies from civilians.”¹⁹

Equally important, “Congress is likely to see [NLT] as being attractive...because it appears to make intervention easier by removing the most significant moral and political barrier to combat casualties.”²⁰ There could be considerable pressure for the U.S. to provide this assistance to peace operations because “given the advanced technology envisaged...only a handful of states will have access to the kinds of technologies as well as the expertise to manage that portion of the operation such as the United States.”²¹

Given this set of circumstances, “airpower’s capability to execute these new roles and missions where policy makers require decisive action to be undertaken in a timely fashion but

always from the moral high ground and under media scrutiny is increasingly critical.”²² Most indications are that “the inherent strengths of aerospace power make its platforms the delivery method of choice for employing non-lethal technology.”²³ Perhaps the biggest advantage of airpower is that “virtually every [air] weapon system in the current military inventory is capable of delivering nonlethal weapons.”²⁴

Air platforms can deliver a wide variety of nonlethal technologies. The use of a bomb canister filled with carbon fibers to degrade the Iraqi electrical power system during DESERT STORM is a perfect example of non-lethal technology. The list of NLTs that could be delivered via air platforms is extensive: super adhesives, super-slippery products,²⁵ fast-forming foams, obscurants, liquid metal embrittlers, combustion inhibitors, tire attacking products, audio weapons, chemical defoliants, and lasers. Airpower could use these NLTs for crowd control, cantonment area isolation, or to locate or defeat a sniper. For example a relatively simple laser device strapped on a helicopter could be scanned to blind anyone looking in the direction of the aircraft or help triangulate the position of the sniper.²⁶ Commanders need to be aware of these technologies and begin to integrate their use in doctrine and training exercises if they are to be effectively used in future operations.

Notes

¹ For an extensive discussion of world population projections and urbanization, visit the U.N. Home Page, Department of Economic and Social Affairs, Population Division. Several articles can be found at <http://www.un.org/esa/population/unpop.htm>. Available On-line. Internet, 1 April 2003.

² Major J. Marcus Hicks, “Fire in the City: Airpower in Urban, Small-Scale Contingencies”. Thesis, School of Advanced Airpower Studies. (Maxwell AFB, AL: June 1999). 4.

³ Especially helicopter airlift and airborne communications.

⁴ For detailed information on lethal airpower in urban environments, see *Fire in the City: Airpower in Urban, Smaller-Scale Contingencies* by Major J. Marcus Hicks.

Notes

⁵ Alan Vick, David T. Orletsky, Abram N. Shulsky and John Stillion. *Preparing the U.S. Air Force for Military Operations Other Than War*. RAND Report MR-842-AF (Santa Monica, Calif.: RAND, 1997): 62.

⁶ Steven C. Nordlund, Vice President for Business Development, Insitu Group, interviewed by author, 12 March 2003.

⁷ Vick, 62.

⁸ While certainly not 100% accurate, GPS guided munitions have a CEP that is so low, it significantly lowers the threshold for employing precision weapons in urban environments.

⁹ Such as the 250-lb Joint Direct Attack Munition (JDAM) in development.

¹⁰ Tubbs, Major James O., *Beyond Gunboat Diplomacy: Forceful Applications of Airpower in Peace Enforcement Operations*, Thesis, School of Advanced Airpower Studies. (Maxwell AFB, Ala.: Air University Press, September 1997): 43.

¹¹ US Army Forces Somalia, 10th Mountain Division After Action Report, 2 June 1993, 67.

¹² Hicks, 109.

¹³ Hicks, 103.

¹⁴ In this view of future conflicts, Martin Van Creveld is correct.

¹⁵ Major Joseph W. Cook, Major David P. Fiely, and Major Maura T. McGowen, "Nonlethal Weapons: Technologies, Legalities, and Potential Policies," *Airpower Journal* (Special Edition, 1995): 78.

¹⁶ U.S. Congress, Office of Technology Assessment, *Improving the Prospects for Future International Peace Operations-Workshop Proceedings*, OTA-BP-ISS-167 (Washington, DC: US Government Printing Office, September 1995): 112.

¹⁷ Mark Nollinger, "Surrender or We'll Slime You," *Wired*, 3.02. (February 1995): 92.

¹⁸ There are several problems with NLTs that may limit their utility. First, there are a number of legal restraints on their use; second, their inability to distinguish between a child and large man resulting in a large range of actual effects; and third, the lowering of the threshold for the use of force. Nonetheless, commanders need to be aware of their existence and possible uses. For an excellent discussion on their use and limitations, see *Nonlethal Weapons: Technologies, Legalities, and Potential Policies* by Majors Joseph W. Cook III, David P. Fiely, and Maura T. McGowan.

¹⁹ Nollinger, 92.

²⁰ US Congress, 96.

²¹ Paul F. Diehl, "The Political Implications of Using New Technologies in Peace Operations." *International Peacekeeping* 9, No. 3 (Autumn 2002): 11.

²² Chris Morris and Janet Morris, "Weapons of Mass Protection: Nonlethality, Information Warfare, and Airpower in the Age of Chaos," *Airpower Journal* (Spring, 1995): 16.

²³ Major Jonathon W. Klaaren and Major Ronald S. Mitchell, "Nonlethal Technology and Airpower: A Winning Combination for Strategic Paralysis," *Airpower Journal* (Special Edition 1995): 47.

²⁴ Klaaren, 47.

²⁵ Super slick substances could prevent the use of certain rail-lines or roads.

²⁶ Cook, 88.

Chapter 5

Conclusion

The nation's leaders see an airpower approach to political-military problems as responsive, relatively economical, and politically acceptable. Consequently, the US political leadership will continue to turn to airpower to help restore order to the disorder of the post-cold-war world.

— Kramlinger

The nature of conflict in the Post Cold War era is vastly different than the symmetrical threats the U.S. Air Force is most suited to fight. Nevertheless, world conditions virtually assure future violence. When internal violence starts to affect either neighboring countries, or world opinion prompts action, peace operations will often be initiated in some form. Because of the prestige and capability provided by the United States, its involvement will usually be requested. In most situations airpower will be the first choice of U.S. policy makers if they decide to provide military force.

The urbanization of the world population, especially in developing countries, indicates that future peace operations will more than likely require urban operations. Additionally, peace operations that involve the separation of uniformed militaries are waning, replaced by situations involving armed populations where distinguishing between combatant and non-combatant will be increasingly difficult. Airpower must confront these situations in future peace operations and the application of non-lethal technologies from airborne platforms will likely play a major role.

Understanding the utility of airpower in urban environments and the availability and capabilities of NLTs will help commanders utilize airpower appropriately.

Due to the complexity of peace operations, several authors have wondered if airpower is still relevant in these situations. This essay demonstrates that the inherent flexibility of airpower coupled with recent technological advances provides commanders in peace operations a wide range of capabilities. Understanding airpower's capabilities, its limitations, and how to integrate it in a synergistic manner with ground forces is crucial to success. However, when airpower is used, it is important to realize that it must be part of a coherent strategy designed to address the underlying problems of the conflict, not just to temporarily stop the fighting.

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